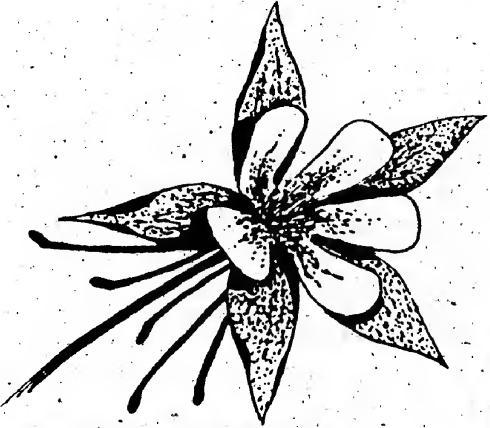


Aquilegia



Newsletter of the Colorado Native Plant Society

"...dedicated to the appreciation and conservation of the Colorado native flora"

Volume 16, Number 2

March/April 1992

Botanical Exploration of the Flat Tops

Jim Vanderhorst
University of Wyoming
Botany Department

For the last two years I have been working on a floristic survey of the "greater" Flat Tops area in northwestern Colorado. The Flat Tops are a volcanic mountain range which rises above the White River Plateau, an uplift composed of nearly horizontal strata of sedimentary rock. Deep canyons radiate from the center of the plateau whose waters drain into the Colorado River on the south and east and into the White River to the west. The plateau is bounded on the southwest by the Grand Hogback. To the north of the Flat Tops lie the headwaters of the Yampa and Williams Fork Rivers and three small adjunct mountain ranges, the Little, Dunkley, and Beaver Flat Tops. This entire area, which I refer to as the greater Flat Tops area, had received relatively little botanical exploration prior to this project although it is surrounded by areas whose floras have been recently inventoried (the Piceance Basin to the west, the Gore Range to the east, the Park range to the north). The purpose of this work is to fill a gap in the knowledge of the flora of Colorado and the Rocky Mountains.

This research is part of a Master's degree program at the University of Wyoming. I have received a great amount of assistance

on this project from my advisor, Ron Hartman and from many other employees and associates of the Rocky Mountain Herbarium (RM), Ernie Nelson, Carlos Palaci, and Walt Fertig, to mention just three. Funding for field work during the summer of 1991 was obtained through a contract with the Nature Conservancy and the Colorado Native Plant Society. The White River and Routt National Forests have also been very supportive of this work as was the late Louis Williams. I am grateful to all of these organizations and individuals.

Over 6000 plant specimens were collected, pressed, and dried during the summers of 1990 and 1991. Collection sites were chosen to represent the diversity of habitats

in all the geographical subdivisions of the study area. Travel to the collection sites was by two wheel drive truck, bicycle, canoe, and on foot. At each site we collected all vascular plants found in flower, fruit, or otherwise as appropriate for identification. Collection proceeded from May through September in both years to account for seasonal variation. Detailed information on date, location, and habitat (geology, soils, végétation, etc...) was recorded for each collection site. The goal of these extensive collections is to document, as completely as possible, the occurrence and distributions of vascular plant species in the area.

A slightly different approach was taken toward Colorado plant species of special

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PRESIDENT'S REPORT**Carol Dawson**

The Board of Directors voted to help fund three researchers who are working on rare Colorado plant species.

Anna Arft is a doctoral candidate at the University of Colorado. Working with Dr. Tom Ranker, her research objective is to study genetic, ecological, and life history characteristics of *Spiranthes diluvialis*. As many of you know, this terrestrial orchid was listed as a threatened species by the U.S. Fish and Wildlife Service on January 17, 1991. With funds from the society, Anna will set up 28 experimental and control plots (one square meter each) to study the effectiveness of mowing, grazing, and

prescribed burning as potential management techniques. Data will also be collected on the life history stages and reproductive behavior of individual plants during the 1992, 1993, and 1994 growing seasons.

The other two recipients of funds will be conducting field surveys this spring. Jin Locklear, director of the Dyck Arboretum of the Plains, will spend eight days in early May looking for *Asclepias uncialis* in northeastern Colorado. Jim searched for the dwarf milkweed in 1990 (see *Aquilegia* Vol. 15 No. 2) in eastern Colorado and northeastern New Mexico, relocating a few of the historic populations. This year, Jim will concentrate his efforts in three areas in northeastern Colorado, making observations on the ecology, biology and overall status of this species.

Peter Root plans to visit Bonny State Recreation Area and other accessible grasslands to look for *Botrychium campestre*. Three plants of the prairie moonwort were found there in 1990 in the loess prairie natural area. Peter will visit likely habitats in April and May when the leaves of this species are visible. Progress reports for these studies will appear in future issues of *Aquilegia*.

Studies like these are extremely important to conservation efforts on behalf of Colorado's rarest plant species. Through the John Marr Fund, the Colorado Native Plant Society is able to make a significant contribution toward better understanding of the status and habitat needs of rare, threatened, and endangered native plants.

Aquilegia

Aquilegia is published six times a year by the Colorado Native Plant Society. This newsletter is available to members of the Society and to others with an interest in native plants. Contact the Society for subscription information.

Articles from *Aquilegia* may be used by other native plant societies or non-profit groups if fully cited to author and attributed to *Aquilegia*.

The Colorado Native Plant Society is a non-profit organization dedicated to the appreciation and conservation of the Colorado native flora. Membership is open to all with an interest in our native plants, and is composed of plant enthusiasts both professional and non-professional.

Please join us in helping to encourage interest in enjoying and protecting Colorado's native plants. The Society sponsors field trips, workshops and other activities through local chapters and statewide. Contact the Society, a chapter representative, or committee chair for more information.

Schedule of Membership Fees

Life	\$250
Supporting	\$ 50
Organization	\$ 25
Family or Dual	\$ 12
Individual	\$ 8
Student or Senior	\$ 4

Membership Renewal/Information

Please direct all membership applications, renewals and address changes to the Membership chairperson, in care of the Society's mailing address. Please direct all other inquiries regarding the Society to the Secretary in care of the Society's mailing address.

Newsletter Contributions

Please direct all contributions to the newsletter to:

**Tamara Naumann
940 Quinn Street
Boulder, CO 80303**

Deadlines for newsletter materials are February 15, April 15, June 15, August 15, October 15, and December 15.

Short items such as unusual information about a plant, a little known botanical term, etc. are especially welcome. Camera-ready line art or other illustrations are also solicited.

Please include author's name and address, although items will be printed anonymously if requested. Articles submitted on disks (IBM or Mac) are appreciated. Please indicate word processing software and version.

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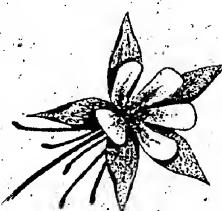
ANNOUNCEMENTS

If you've been wondering where your newsletter is...

We're still learning! It didn't take long to gain a clearer understanding and appreciation for the hard work Sally White, Peter Root and their committee members put into making *Aquilegia* a quality newsletter. The high standard they set is a hard act to follow, but we're bumping along. With Tamara Naumann groping for the steering wheel, Mark Gershman manning the computer and trying to teach Tamara how to use her new PageMaker software, Janet Coles working on her first assignment finding a new printer and inspecting recycled paper (she'll also be calling you Chapter Presidents soon!), Bill Weber typing (and writing) up a storm, Nina Williams tracking down artwork, and Scott Spaulding lending technical assistance when we can't figure out how to "get that flower on the front", we're off to an exciting and challenging start.

Kudos to the retiring editorial committee for persistence and a job well done! We hope to continue the tradition with help from all you members out there. Keep those blurbs and stories coming! We'll do our best.

P.S. We had a hard enough time doing the text. If you want to see artwork, you're just going to have to wait until the next issue. So be sure your dues are paid!

**Denver chapter members**

If you would like to receive a summary of the results of the Denver chapter questionnaire, call Ron Abbott at 333-6151.

Dues Reminder

Check your mailing label to see if you are "PAID THRU 1992". If not, a check in the mail to us will ensure your continued membership in the only organization dedicated to Colorado's native flora. Don't let this issue of *Aquilegia* be your last!

Publications Available

The Prairie Garden, by Rick Brune, is a compilation of practical prairie-garden know-how, collecting Rick's articles for *Aquilegia* in one handy reference. The 12-page booklet, with a new list of selected references, is available from the Society or the author for \$3 plus \$.75 postage. Order directly, and make checks payable to either:

Colorado Native Plant Society
P.O. Box 200
Fort Collins, CO 80522
or
Rick Brune
2060 Garland Street
Lakewood, CO 80215

For information on quantity discounts, please call Sally White at 697-5439.

Rare Plants of Colorado is available from:

Rocky Mountain Nature Association
Rocky Mountain National Park
Estes Park, CO 80517

for \$10.75 including shipping.

Four copies of **How to Know the Ferns and Fern Allies** by John T. Mickel are still available. The price is \$16 plus \$1.05 postage.

Twelve FREE copies of **The Hepaticae (liverworts) of Utah** by Seville Flowers are available for \$1.05 in postage!

If you are interested in either of these publications, call or write:

Bill Jennings
P.O. Box 952
Louisville, CO 80027
(303) 666-8348

Contact Velma Richards
3125 Monmouth
Englewood, CO 80110
(303) 794-5432

if you want to take advantage of CONPS discounts on these publications:

Intermountain Flora, Vol. 1
Vascular Cryptogams & Gymnosperms
\$29.60 plus \$2 postage

Intermountain Flora, Vol. 3B
Fabales
\$51.70 plus \$2 postage

Intermountain Flora, Vol. 4
Asteridae (except Asteraceae)
\$66.15 plus \$2 postage

Catalogue of the Colorado Flora
by W. A. Weber and R. C. Wittman
\$25.00 plus \$2 postage

Rocky Mountain Flower Finder
by Janet Wingate
\$3 plus \$1.50 postage

Make checks payable to Colorado Native Plant Society.

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Flat Tops, continued from front page

concern as listed by the Colorado Natural Areas Program. Known populations of these species in the study area were relocated (when possible) and element occurrence records were updated. Whenever new populations of these plants were found these were mapped and more detailed information on location, phenology, and habitat was documented.

Identification of the specimens took place at RM in Laramie following the summer collection seasons. This task was completed in January of this year except for a few difficult taxa (any *Cirsium*, *Lupinus*, or *Poa* experts out there?). Over 850 taxa have been identified including 11 Colorado Plant Species of Special Concern. A European weed, *Diplotaxis muralis*, was found for the first time in the state. A number of collections probably represent extensions of known distributions although this is difficult to determine without further investigation. Plants in this category include *Epilobium clavatum*, *Leucocrinum montanum*, *Podistera eastwoodiae*, *Spirodella polyrhiza*, and *Yucca glauca*. The species of special concern which were found are:

Aquilegia barnebyi
Asplenium trichomanes-ramosum
Astragalus wetherillii
Festuca dasyclada
Oxytropis parryi
Pellaea breweri
Pellaea glabella
Penstemon harringtonii
Platanthera sparsiflora var. *ensifolia*
Pyrola picta
Sullivantia purpusii.

The canyons which cut through the White River Plateau are home to the highest diversity of plants of special concern which I found anywhere in the greater Flat Tops area. *Aquilegia barnebyi* and *Sullivantia purpusii* were previously known to inhabit these canyons. Two known populations of the *Sullivantia* were relocated and surveyed in the canyons of Rifle and Dead Horse Creeks and a new population was found along Lost Solar Creek in the Flat Tops Wilderness. This species is found growing in travertine deposits below dripping cliffs.

Aquilegia barnebyi has a broader distribution in wet areas but was also found on travertine with *Sullivantia*. Two new populations of *Platanthera sparsiflora* var. *ensifolia* were found in the canyons of Rifle and East Elk Creeks. These collections are the first known from Garfield County (thanks to Bill Jennings for verifying my orchid specimens and providing information on distribution). *Pellaea glabella* was found growing on the limestone walls of Rifle Creek canyon and *Festuca dasyclada* was collected in the bottom of this same canyon. Finally, one small population of *Pyrola picta* was found growing in the duff of a mixed conifer forest near East Canyon Creek.

Blair Mountain is the highest elevation point on the White River Plateau. Here, on its limestone rimrock we found populations of two rare ferns, *Asplenium trichomanes-ramosum* and *Pellaea breweri*. Neither of these species was found elsewhere in the study area but they should be looked for in other high elevation limestone sites.

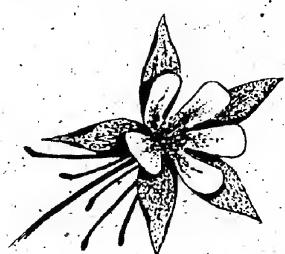
The dry, low elevation, pinyon-juniper and oak zones on the periphery of the greater Flat Tops area also host two plant species of special concern. I found two small populations of *Penstemon harringtonii* on shale ridgetops to the east of the Flat Tops near the Colorado River. Both of these populations are notable in that they are not roadside sites where this species is usually found. *Astragalus wetherillii* was previously known from three sites on the Grand Hogback north of Rifle in the southwestern corner of the study area. These populations were relocated and surveyed and three new populations of this locoweed were discovered in more remote locations, two on the Hogback west of Rifle and one slightly north on Joe Hill.

Finally, *Oxytropis parryi* was collected once in a mixed collection with *Astragalus alpina*. These plants were growing together on an eroding shale saddle above Sheriff Reservoir just north of the Flat Tops. It is interesting that no plants of special concern were found in the Flat Tops *sensu stricto*. These flat, basalt mountain tops lack a great diversity of habitats and their flora is consequently fairly uniform ("great golf courses in the sky" as my friend Carlos calls them). However, if you are interested in birds, the

Flat Tops are a great place to observe Ptarmigan.

An annotated checklist of all vascular plant taxa documented in this study will be included in a thesis which I will complete this spring. All specimens collected will be mounted and deposited at RM and duplicates will be made available to the herbaria at the University of Colorado at Boulder and Colorado State University and to the White River and Routt National Forests. Copies of the completed thesis will also be given to these institutions.

In spite of the high number of taxa which were found, this study should not be considered complete. As other botanists working on similar surveys have noted, new species were found up to the very last day of collecting. Specimens of *Listera borealis* and *Salix cascadensis* were collected from the Flat Tops area in the 1930's but I couldn't find either, although I searched for them in appropriate habitats at their named localities. Are these plants still present but hidden in the Flat Tops or have they disappeared? Landscape disturbance has occurred in the Flat Tops during the last century in the form of extensive spruce beetle infestations and cattle and sheep grazing. At least two noxious weeds, toadflax (*Linnaria vulgaris*) and Canada thistle (*Cirsium arvense*), are present in the Flat Tops Wilderness; toadflax dominates some mountain meadows. One National Forest official told me that one of the most important uses of floristic documentation to them will be to judge unacceptable change in the ecosystems on public lands. I hope that the information gathered by this study will be added to and used by the botanists, land managers and conservationists of the region. The greater Flat Tops area has many unique attributes and its flora, fauna and scenery deserve to be preserved for many future generations of people to enjoy.



Workshop Review

Orchids of Colorado - taught by Bill Jennings Review by Tina Jones

Bill Jennings, well-known in Colorado for his fascination and expertise with native orchids, presented two workshops on the native orchids of Colorado, on December 7 and 8, at the Katherine Kalmbach Herbarium, Denver Botanic Gardens. Bill led off the workshop with a slide presentation. Since herbarium specimens do not retain their actual color and size, Bill's closeup photographs were extremely helpful and very sharp and detailed. One could make out the individual sepals, petals, and the column in almost each species shown. In some of his photographs even the pollen sacs (pollinia) were visible. The pictures were so lovely that I felt like I was in the field with the orchids. Bill provided the students with a *Key to the Orchids of Colorado* (modified by Jennings from one developed by Dr. Charles Sheviak). The slides were presented in the same order as the species appeared in the key. Attendees took notes while Bill pointed out the features of each species important for identification.

While most orchids of Colorado are fairly easy to identify, the differences between species in *Corallorrhiza*, *Spiranthes*, and particularly *Limnorchis*, are sometimes subtle and at other times minute. To make identification easier, Bill provided students with a handout that included detailed drawings by Carolyn Crawford showing the minute differences found in species of *Limnorchis* and *Spiranthes*. These were most helpful. After the slide show, students looked at herbarium specimens and used them to test Bill's key. I found the key to be well-organized and user-friendly.

In addition to the key, Bill had several other handouts: a checklist of orchids occurring in Colorado, a list of the orchids occurring in the western U.S., a list of references on orchids, a list of changes and updates to the books of Harrington and Weber, a list of

Colorado orchids ranked from most to least abundant, and count location dot maps for all but the most common species. Bill indicated that *Aquilegia* readers who wish to have a set of handouts should drop him a note at P.O. Box 952, Louisville, CO 80027 and they will be provided free of charge. This is a real *understated* bargain.

After showing slides of some of the orchids found elsewhere in the western U.S., the workshop ended. Everyone agreed that the

pictures and handouts were most helpful and that they would use the key in identifying orchids next field season. I myself found two topics especially interesting in the workshop: the symbiotic relationship that most orchids have with fungi, and the unique devices and tricks that each kind of orchid has to attract the individual pollinator. All in all, this was one of the best workshops I have participated in through the Colorado Native Plant Society.

Colorado Reports of *Dicentra uniflora*

William A. Weber

The following reports of *Dicentra uniflora*, first published in *Aquilegia* Vol. 15, No. 2, page 11 (1991), were documented further in a letter dated 31 January 1992 sent to me by Mr. Michael Petersen, of Greeley, Colorado. Mr. Peterson collected no specimens but took 35 mm photographs, one of which he has promised to deposit in the University of Colorado herbarium (COLO). The information provided here justifies our acceptance of the Colorado reports:

GARFIELD CO.: West Divide Creek drainage, off road to Uncle Bob Mt., before USFS boundary, T7S R91W S32, Gibson Gulch Quadr., May 17, 1975; under sagebrush, gravelly surface, soils derived from aeolian loess mixed with basaltic stones, slope 12-15%; plant 5 cm tall. Northwest Creek area on Naval Oil Shale Reserve on BLM property, T5S R94W S7, Anvil Points and Rio Blanco Quads. (access is shown on Anvil Points Quadr.), E-facing

slope 6%; soils deep silty loess, 16 May 1975.

MESA CO.: T8S R91W S20, Flatiron Mt. Quadr., S-facing slope, 10%, in sagebrush; soils loess with a few gravels, over basalt, some *Mahonia* nearby, 15 May 1975.

I can't emphasize too strongly the importance of collecting and depositing voucher specimens in a major herbarium of record. Such specimens represent the only permanent record of the native Colorado flora. Without voucher specimens, verification of the occurrence and distribution of rare or unusual plant species is extremely difficult. Conservation efforts rely heavily on the permanent historical records stored in herbarium collections. Herbarium specimens will be on file for a hundred years or more, and should always be available for study and reconfirmation!

Field Trips - 1992 Season

North Table Mountain

Sunday, May 24

Trip Leaders: Paul Kilburn & Sally White

We will explore this natural history gem on foot from bottom to top (and back to the bottom again). The trip will concentrate on spring flowers, shrubs, and trees, with attention given to the major plant communities, bird life, geology, and human use of this lava-capped mountain rising a thousand feet above the plains.

Meet at 9:00 AM at the parking lot of Table Mountain Ranch just off 58th Avenue on the north side of the mountain, where we will park our cars. 58th Avenue runs east and west between Highway 93 and Easley Road and is about four miles north of Golden.

Bring lunch, drinking water, and good hiking shoes. We plan to return by 3:00 PM.

Paul Kilburn is a plant ecologist who originally taught botany in Illinois, California, and Colorado before becoming an environmental consultant in Colorado. Sally White has studied the vegetation and flora of North Table Mountain with Paul Kilburn extensively over the past several years. She is founder and leader of Jefferson County Nature Association and a board member of CONPS.

To register, call Jeff Dawson, field trip coordinator in Denver, telephone 303-722-6758 (home) or 303-740-2793 (office).

Aiken Canyon Preserve

Saturday, June 6

Trip Leader: Alan Carpenter, The Nature Conservancy

Aiken Canyon near Colorado Springs is one of the Nature Conservancy's newest preserves in Colorado. This pristine area is one of the best-preserved foothill canyons in the Front Range. We will walk in a leisurely manner along the lower portions of the preserve (short-grass prairie), up into the canyon (Douglas-fir, white fir, Gambel oak, mountain-mahogany) and then return across the Fountain Formation (one-seed juniper and mountain-mahogany).

Meet at the entrance to the preserve at 10:00 AM. The trip will conclude about 4:00 PM. From Denver, drive south on Interstate 25 to the south side of Colorado Springs. Exit at S. Nevada Street/Highway 115. At S.

Nevada, note your mileage, and drive south on Nevada past the never-ending procession of hot-dog stands, etc., for 15 miles. Watch for a small street sign for "Wild Horse Road" on the west side of the highway. This small sign is easy to miss. Turn right (west) and queue up for the one-half mile road into the preserve.

Bring your own lunch, water, sunscreen, and rain gear. The weather should be hot, but who knows?

Trip limit 15 persons. To register, call Jeff Dawson, field-trip coordinator in Denver, at 303-722-6758 (home) or 303-740-2793 (office).

Telluride Area**Saturday-Sunday, July 18-19**
Trip Leader: Peggy Lyon

This two day trip to Telluride will include one day assisting a Youth Environmental Services (YES) team (6 young women between 16 and 18 years old) with identification of plant species in transects on Sunshine Mesa, just outside of Telluride. This program is a cooperative effort of the Forest Service, BLM, and The Nature Conservancy. Telluride is an attractive place for a weekend, and Peggy Lyon is hoping to expose the YES girls to some plant enthusiasts so they don't think she's the only weird one around. On the second day we will have a half-day hike in the Telluride

area, destination yet to be decided. Further details on this trip will be provided in a subsequent description or after registration.

Meet at 9:00 AM Saturday at the Telluride Institute office on S. Fir St., two blocks south of the main street (Colorado Avenue). Campers can join the YES team on Friday or Saturday at a primitive site on Sunshine Mesa, or can camp in an established campground.

To register, call Jeff Dawson, field trip coordinator in Denver, telephone 303-722-6758 (home) or 303-740-2793 (office).

Conejos Valley**Saturday-Sunday, June 20-21**
Trip Leader: Patsy Douglas

Patsy Douglas has recently completed a floristic inventory of the Conejos River drainage in southern Colorado, as part of a MS thesis at Colorado State University. Her study area extended from the Continental Divide to Fox Creek, near the eastern boundary of the Rio Grande National Forest. This area is highly diverse, with about 800 vascular plant species, a range of habitats from piñon-juniper to alpine tundra, and a number of rare species. On this trip, she will share her knowledge of this remote scenic area with members of CONPS.

Meet at 9:30 on Saturday at Patsy Douglas' house, 21 miles west of Antonito on Hwy. 17. Her house is on the left by the river as you go west; and she will have put up a big sign. The field trip will last all day Saturday and about one-half day on Sunday.

We will try to arrange group camping for Friday and Saturday nights at Elk Creek Campground, located one mile southwest of FR 128 from Hwy. 17, 27 miles west of Antonito. This is a Forest Service campground with water and restrooms but no trailer hookups, and is very scenic. The elevation is about 9,000 feet. Motels are available primarily in Alamosa about 50 miles away.

This area is often cold and wet, so bring gear to keep warm and dry. There will be moderate amounts of hiking. Regular cars will be appropriate for travel. Patsy Douglas will provide a species list for the area.

To register, call Jeff Dawson, field trip coordinator in Denver, at 303-722-6758 (home) or 303-740-2793 (office).

High Creek Fen & Horseshoe Cirque

Saturday-Sunday, July 11-12

Trip Leaders: Alan Carpenter & Barbara Siems

This is a combination of two one-day trips to two of the most interesting areas in South Park. On the first day, Alan Carpenter of The Nature Conservancy will show us their new High Creek Fen preserve, a unique rich calcareous fen with many unusual species. The following day, Sunday, Barbara Siems will take us to scenic Horseshoe Cirque below Horseshoe Mountain and nearly across the mountain divide from Leadville. Dr. Weber has called this one of the most "significant" areas in the state. Barbara Siems is currently working on a PhD at the University of Washington, with her subject being plant community composition in relation to soils in the Horseshoe area.

Participants are welcome for either or both days. Campers should plan to stay at Buffalo Springs Campground, 14.5 miles south of Fairplay on US 285 and about a half mile west on FR 431. This is a good group campground with water and pit toilets and is warmer than valley areas receiving cold air drainage. Motels are available in Fairplay and Buena Vista.

On Saturday we will meet at the entrance to the High Creek Fen preserve at 10:00 AM and will depart the preserve at 4:00. From Fairplay, drive south on US 285 for 8.3 miles to just south of milepost 174. Turn left (east) on a good gravel road and park your car. We will meet there. The fen is very wet, and you will be walking in water much of the time. There are two strategies for footwear. The best is to bring a pair of waterproof rubber boots (like irrigators use) to wear in the fen. The other strategy is to bring a spare pair of old tennis shoes that will get wet. Do not wear good leather shoes in the fen, as they will get soaked (and you may lose them in the muck!). Expect warm weather with possible thundershowers. We'll wander around the fen, seeing many willows, sedges and rushes. We'll also inspect the completed first phase of a wetland restoration

project at the fen. Bring your own lunch, water, sunscreen and rain gear.

On Sunday we will meet at 9:00 AM at the junction of US 285 with the Fourmile Creek Road south of Fairplay. We'll then drive 13 miles up Fourmile Creek Valley on a gravel road that is very bumpy in places. At this point it is likely we will have to park and walk, since snow usually blocks the road until July 15-20. This is probably a blessing in disguise since it provides time to appreciate the Krummholz flora and the scenery. The parking spot is at about 11,600 ft. elevation, and the walk will be about 1.25 miles to 12,200 ft. The pace can be relatively slow, since we will have gotten an early start. Once we reach the upper cirque area, the trip can be flexible. There are a number of interesting areas to investigate, including wetlands with *Carex microglochin*, *Kobresia myosuroides*, *simpliciuscula*, *schaenoides*, and *Eriophorum alatum*. *Salix lanata* is found in a small colony at the end of the road, and the tundra supports *Astragalus molybdenus*, *Oxytropis viscida* and *O. podocarpa*, *Physaria alpina*, *Pyrrhocoma uniflora*, and (later in the season) *Saussurea weberi*. Sharp eyes can locate a very small population of *Braya humilis*. Vegetation composition changes with the transformation from limestone and dolomite to pre-Cambrian granite. Bring sturdy walking boots, lunch, water bottle, sunscreen, rain and wind protection, field guides, camera, and a day pack.

To register for one or both days, call Jeff Dawson, field trip coordinator in Denver, telephone 303-722-6758 (home) or 303-740-2793 (office). Participants for High Creek Fen limited to 15 persons.

Chapter Meetings

Boulder Chapter

May 12: Annual Picnic

Our annual opportunity to enjoy a spring evening together. We'll discuss upcoming summer activities, tour the native plant garden at the Chautauqua ranger cottage; and (if time and weather permit) we'll explore areas further west. Meet at 6:00 p.m. at the parking area north of the ranger cottage at Chautauqua Park (8th and Baseline). Don't forget to bring your supper!

June 9: Plant Keying Field Trip

Merriam Denham will lead this session on keying plants in the field. Meet at 5:45 p.m. at the Beech Pavilion on County Open Space (east of the intersection of North Foothills Highway and Neva Road).

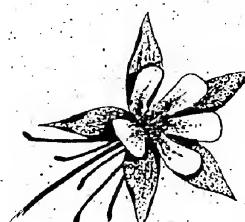
Monthly meetings are held from September through April on the 2nd Tuesday of the month at 7:30 p.m. at the Foothills Nature Center, 4201 North Broadway, unless otherwise noted. For more information, call Alison Peck at 443-0284.

Denver Chapter

May 27: Incredible Edibles

Dave Conant will present a slide show and talk on Colorado natives having food, medicinal, and other values - recipes included!

Monthly meetings are held from September through May on the last Wednesday of the month 7:30 p.m. at the Denver Botanic Gardens, 909 York Street, unless otherwise noted. For more information, call Ron Abbott at 333-6151.

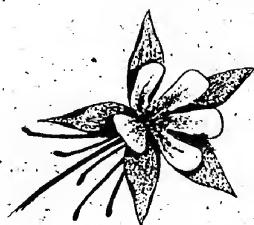


Fort Collins Chapter

May 13: Using Native Plants for Restoring Natural Areas

Brian Geils has arranged a panel discussion on the use of native plants for restoration of natural areas. The discussion will be held in conjunction with the Society of American Foresters meeting (7 p.m.).

Monthly meetings are held from September through May at the Rocky Mountain Forest and Range Experiment Station, 240 West Prospect. For more information, call Brian Geils at 482-8607.



San Juan Chapter

The San Juan chapter is compensating for its small and widely scattered membership with aggressive networking. We have developed a memorandum of understanding (MOU) with the BLM which will lead to many cooperative endeavors, including our first exploratory field trip in April. In February we hosted a meeting with weed advisory board members to learn about plans for weed control in Ouray, Delta, and San Miguel counties. We held a joint meeting with the Black Canyon Audubon Society on April 1st with a slide presentation on the flora of the Las Vegas area.

Plans for future activities include a joint field trip/hike to Dominguez Canyon with the Sierra Club in May. We'll also be hosting a field trip in July near Telluride for all CONPS members, in conjunction with Youth Environmental Services and the U.S. Forest Service.

For more information on San Juan Chapter activities, call Peggy Lyon at 626-5526.

What's in a Name? Derivation of *Iliamna*

William A. Weber & Paul Fryxell

The name *Iliamna* was proposed by E.L. Greene for a genus of Malvaceae that has three of its seven species in Colorado. Ira Wiggins, who monographed the genus, *Contrib. Dudley Herb.* 1:213-231. 1936, stated that "the name is of Greek derivation, but the significance is uncertain." In my *Flora of Colorado: Western Slope*, I wrote: "Name not explained, but probably not of Greek origin as usually supposed. In Alaska there are a Mount Iliaminsk and a Lake Iliamna, possibly named by Russian explorers. [*Iliamna* does not occur in Alaska]. Perhaps Greene saw this name and found it pretty, but kept his readers guessing. Another suggested explanation from Paul Fryxell, Malvaceae specialist, is Greek, *ilyos*, mud, + Latin, *annis*, river, but Greene [being a classical scholar] would never stoop to mixing two classical languages!"

Greene was fiercely independent and iconoclastic, and had many enemies and carried on feuds with other botanists. Marcus Jones, another important western botanist, lived to write the obituaries, in his privately published botanical journal, of many of his own enemies. Of Greene, he wrote: "Greene, the pest of systematic botany, has gone and relieved us from his botanical drivel. They say that the good men do lives after them, but the evil is interred with their bones [a bad quotation of Shakespeare, incidentally]. I suspect that his grave must have been a big one to hold it all." So I feel justified in guessing that, being a fluent classical scholar and eager to confound his botanical critics into seeking a classical derivation of a name that does not have classical roots.

Dictionary of Alaska Place Names, by Donald J. Orth, USGS Prof. Paper 567, 1967, reported that "according to G. C. Martin, USGS, *Iliamna* is said to be "the name of a mythical great blackfish, supposed to inhabit this lake, which bites holes in the bidarkas of bad natives." One suspects this

to be the kind of reply given by local people to a stupid question asked by a non-native researcher.

Thanks to Dr. Lydia Black, Professor of Anthropology at the University of Alaska, this problem has been solved. She writes: "The name *Iliamna* is a Russian version of the Dena'ina (Athabaskans of Alaska Peninsula and Cook Inlet) name *Nilamna*. This is the way it is pronounced in speech. The term derives from two words, *nila* for "islands" and *yana* for "lake" (islands in the lake). I am sorry to tell you that often *Alaska Place Names* gives erroneous information. Martin's information is news to me and to Jim Kari (Alaska Native Language Center). I know of no 1802 Russian map (although I know several earlier ones from the 18th century that show the area). The correct spelling of the name of Grigorii Shelikov (for whom the lake was called for a time) is as above, in this sentence. *Iliaminsk* is an English perversion of the Russian adjective derived from the name *Iliamna*. The proper adjectival forms, depending on the gender of the noun, are: *Iliamnskaia* (feminine, which can apply to *sopka*, Russian for a peak); *Iliamnskoe* (neuter, applies to things like *ozero*, lake); or *Iliamnskii* (masculine, which would apply to *vulcan*, a volcano).

On the original Tebenkov's chart of Cook Inlet, the inscription reads: "sopk. *Iliamna*." *Ilyamna*, spelled with a y, is simply a different transliteration of the Russian sound ya; ia in the Library of Congress system, ya in the Board of Geographic Names system of transliteration. There is no relationship between St. Elias (in Russian Sv. Il'i) and Elim. Why Greene named the genus I have no idea at all."

Iliamna was on the maps of Alaska. Greene certainly had access to them. I believe Greene was just putting his critics on!

Those Awful Generic Names!

William A. Weber

I understand very well and sympathize with people who don't like to have the names of genera changed or to have an old genus split into one familiar and one completely alien. Nevertheless, science has to progress but, as I have said many times, scientific names are the most concise way that botanists have of stating a point of view, in fact expressions of points of view are part of a scientist's Bill of Rights. Here is an example that should cause us to cogitate on both sides of the question.

In October I returned from a third trip to Nepal, and while writing up my journal I had occasion to look up some plant names in the *Catalogue of the Flowering Plants of Nepal*. I was looking for a strange thistly plant that I thought might be a species of *Serratula* and, thumbing through the book, I found a genus name that was completely new to me, but it included a species that is probably the best known weed in Colorado, if not North America. The Japanese botanist, Kitamura, had written the section on Asteraceae, and was adopting the genus name *Breea* for what we have been calling *Cirsium arvense*, or Canada Thistle. Why a Eurasian plant should ever have been called Canadian is a real question, but it has nothing to do with the present case.

Kitamura separates *Breea arvensis* (L.) Lessing off from *Cirsium* because of a few characters that it shares with no other species. The flowers are unisexual and the plants are partly or entirely dioecious, a character shared with no other species of *Cirsium*, and the plant reproduces by deep-seated underground rhizomes, as anybody knows who has tried to eradicate them, a character that it shares with only *Cirsium flodmanii*. As far as I know, *C. arvense* cannot hybridize with other species. Neither does *C. flodmanii*.

From the chromosome atlases of the

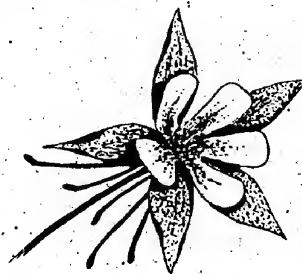
flowering plants, most or all of our American *Cirsium*, as well as the Canada Thistle, have 34 chromosomes, so at least they are somewhat related. However, *C. flodmanii*, a species with the heads and leaves of *Cirsium* but the root system of Canada Thistle, has 22 chromosomes. This difference in chromosome base numbers (11 and 17) suggest that *C. flodmanii* might, in fact, not be a *Cirsium* either. But this is a problem to solve in the future. What is interesting is the nomenclatural history of *C. arvense*.

We might say, why not stick with Linnaeus' original arrangement? But Linnaeus did not recognize *Cirsium*. He called our thistles *Cnicus*! Furthermore, he did not put *C. arvense* into *Cnicus*, but into *Serratula*, a thistle-like genus that is still around, but only in Eurasia. Who was responsible for making it a *Cirsium*? The Italian, Scopoli, in 1772. The genus *Cirsium* was proposed by P. Miller to include a European species, *C. heterophyllum*, and our species follow it into the genus. Everybody seems to have followed Scopoli until the present day, although Lessing, in 1832, realized the differences that I have pointed out above, and made a separate genus of it, *Breea*. There seems to be every justification for separating *Breea* apart from *Cirsium*, but either botanists were not aware of this or were simply following what they felt was Linnaeus' lead, and he was certainly dominant in the early 19th century.

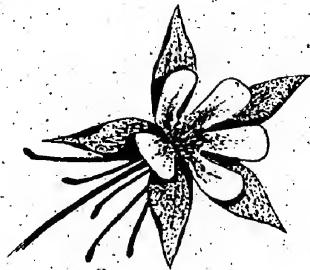
Now we come to the problem of human nature: In Japan, two species of *Breea* were recognized in the flora, *B. setosa* and *B. segeta*. Kitamura was only bringing *C. arvense* into *Breea* to conform with current usage in the Japanese flora. Since the species does not occur in Japan and probably is not a pest in Asia, it would not bother him in the least to adopt a new name for a well-known species. Wendell Camp also pointed out that if we were to be really accurate and

consistent about the genera of Huckleberries in North America, we would have to adopt names proposed for South American types and unknown to Norteamericanos. So, the scientist is concerned about relationships, and as a scientist he cannot be ruled by what non-scientists would like to call their plants because that's the way they learned them.

But just try to get the lay citizens and the applied agriculturists and foresters to accept a new name for the Canada thistle! This year, next year, in a hundred years? The pure scientist and the applied scientists use names for different purposes. Perhaps, in the end, when faced by an irresolvable conflict, perhaps the applied folks should be content with using whatever name they like, but not attack the scientist for trying to strive toward the natural classification that has been our goal for two centuries, and which is supposedly represented by the names we use.



Editor's note: Canada thistle is not native to Colorado, but infestations of Canada thistle and other exotic weeds threaten many native plant communities in Colorado. Wet meadow communities are especially vulnerable. *Spiranthes diluvialis* populations in Boulder are also threatened by this exotic weed. An understanding of the biology and ecology of non-native weeds is important to our efforts to defend native plant communities from their impacts.



Dwarf Mistletoe: Pest? or Provider?

Tamara Naumann

Dwarf mistletoe (*Arceuthobium vaginatum*) is a native mistletoe that parasitizes ponderosa pine in Colorado. Until recently, it has been considered a forest pest. From a forester's point of view, it reduces timber yield, suppresses seed production, lowers wood quality, increases susceptibility to insect damage, and kills trees (usually very gradually). From a bird's point of view, dwarf mistletoe makes great habitat.

In a recent issue of BioScience (Vol. 41, No. 11, page 755), Christine Mlot summarized the results of a study conducted by Fort Collins researchers Frank Hawksworth (U.S. Forest Service), Robert Bennetts and Gary White (both with Colorado State University). In two Front Range ponderosa pine forests, diversity and abundance of bird fauna was strongly correlated with the presence of mistletoe. The mistletoe apparently provides nesting and roosting habitat for birds; it appears to also provide habitat for a variety of invertebrate species upon which the birds feed. Can it be that dwarf mistletoe is not a pest at all, but an important element of the ecology of ponderosa pine forests? We understand so little yet of the role of native plants in the health and function of the ecosystems we inhabit.

Ethnographic Uses of *Aquilegia*

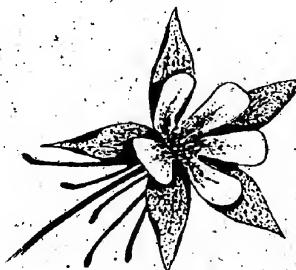
Tamara Naumann

The University of Nebraska press recently reprinted an enlarged edition of Melvin R. Gilmore's *Uses of Plants by the Indians of the Missouri River Region*. The book is based on Gilmore's 1914 doctoral thesis, and is reproduced from the Thirty-third Annual Report of the Bureau of American Ethnology (Washington, D.C.: Government Printing Office, 1919). A number of exquisite pen-and-ink illustrations by Bellamy Parks Jansen have been added to Gilmore's fascinating text.

Here's what Gilmore had to say about *Aquilegia canadensis* (Wild Columbine): "The seeds are used by Omaha and Ponca, especially by bachelors, as a perfume. To obtain the odor the seeds must be crushed, a result which the Omaha commonly get by chewing to a paste." A student of Bessey and Clements, Gilmore was interested in the role native plants played in the lives and culture of Native Americans. His interest is illustrated in his description of the methods employed to evoke certain of the wild columbine's special qualities: "For use as a love charm the pulverized seeds are rubbed in the palms, and the suitor contrives to shake hands with the desired one, whose fancy it is expected will thus be captivated. Omaha girls were somewhat in fear of the plant because of this supposed property...."

If you are interested in Native American culture and ethnobotany of the Great Plains region, you'll enjoy this book. It is available in hardcover (\$25.00) or softcover (\$9.95) plus \$2 postage from University of Nebraska Press, 901 North 17th Street, Lincoln, Nebraska 68588-0520.

Note: *Aquilegia canadensis* occurs throughout the eastern Great Plains, and as far west as western Nebraska. It has not (yet?) been documented from Colorado.



Calendar Overview

1992 Field Trips

May 24 North Table Mountain
with Paul Kilburn and Sally White

June 6 Aiken Canyon Preserve
with Alan Carpenter

June 20-21 Conejos Valley
with Patsy Douglas

July 11-12 High Creek Fen and Horseshoe
Cirque with Alan Carpenter
& Barbara Siems

July 18-19 Telluride Area
with Peggy Lyon

Chapter Meetings

Boulder Chapter
Annual Picnic
Field Keying

Denver Chapter
Incredible Edibles

Fort Collins Chapter
Native Plants in Restoration

May 12

June 9

May 27

May 13

Colorado Native Plant Society
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